COTS Impact to RM&S from an ISEA Perspective

Robert Howard

Land Attack System Engineering, Test & Evaluation Division
Supportability Manager, Code L20

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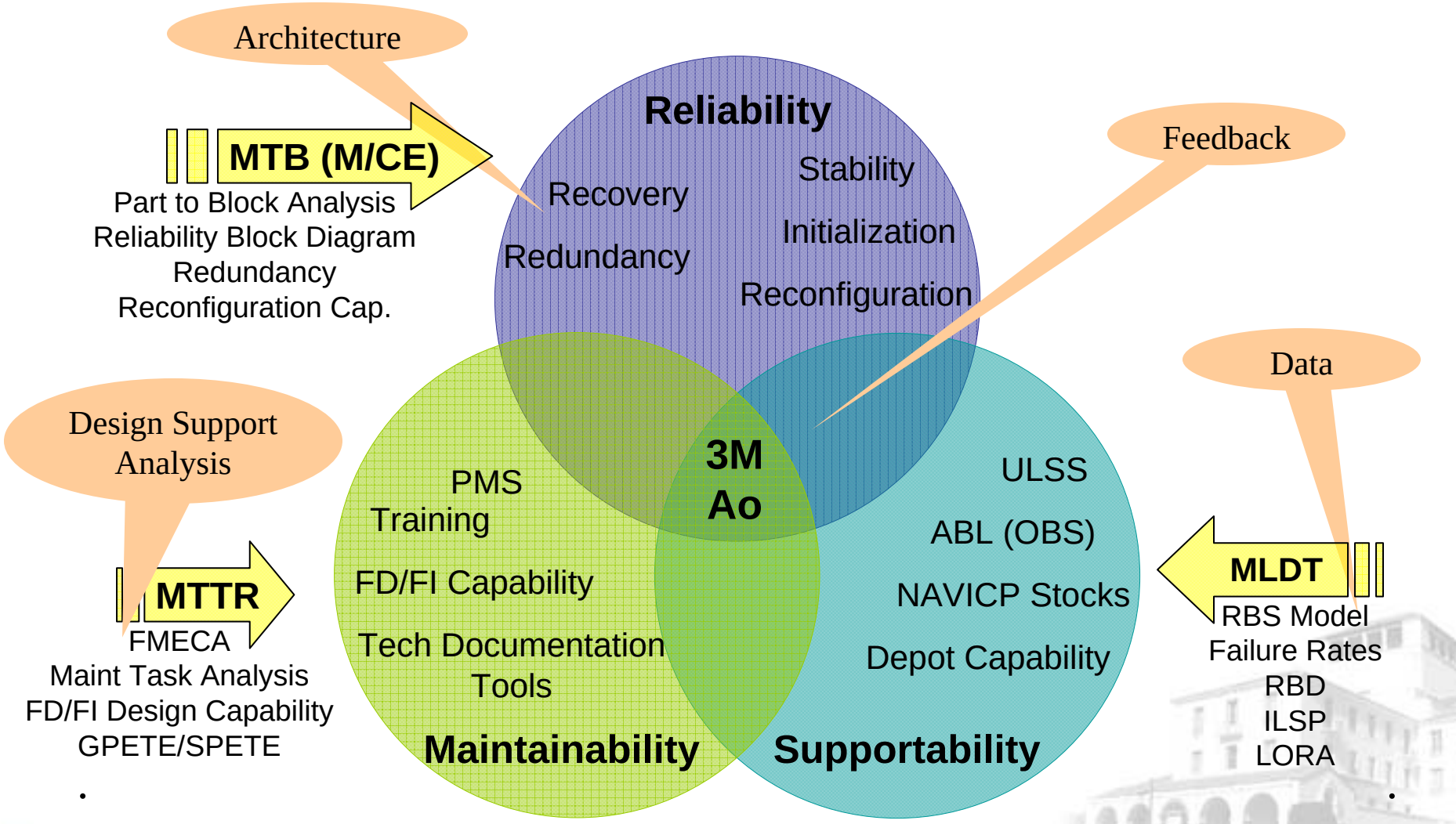
Introduction

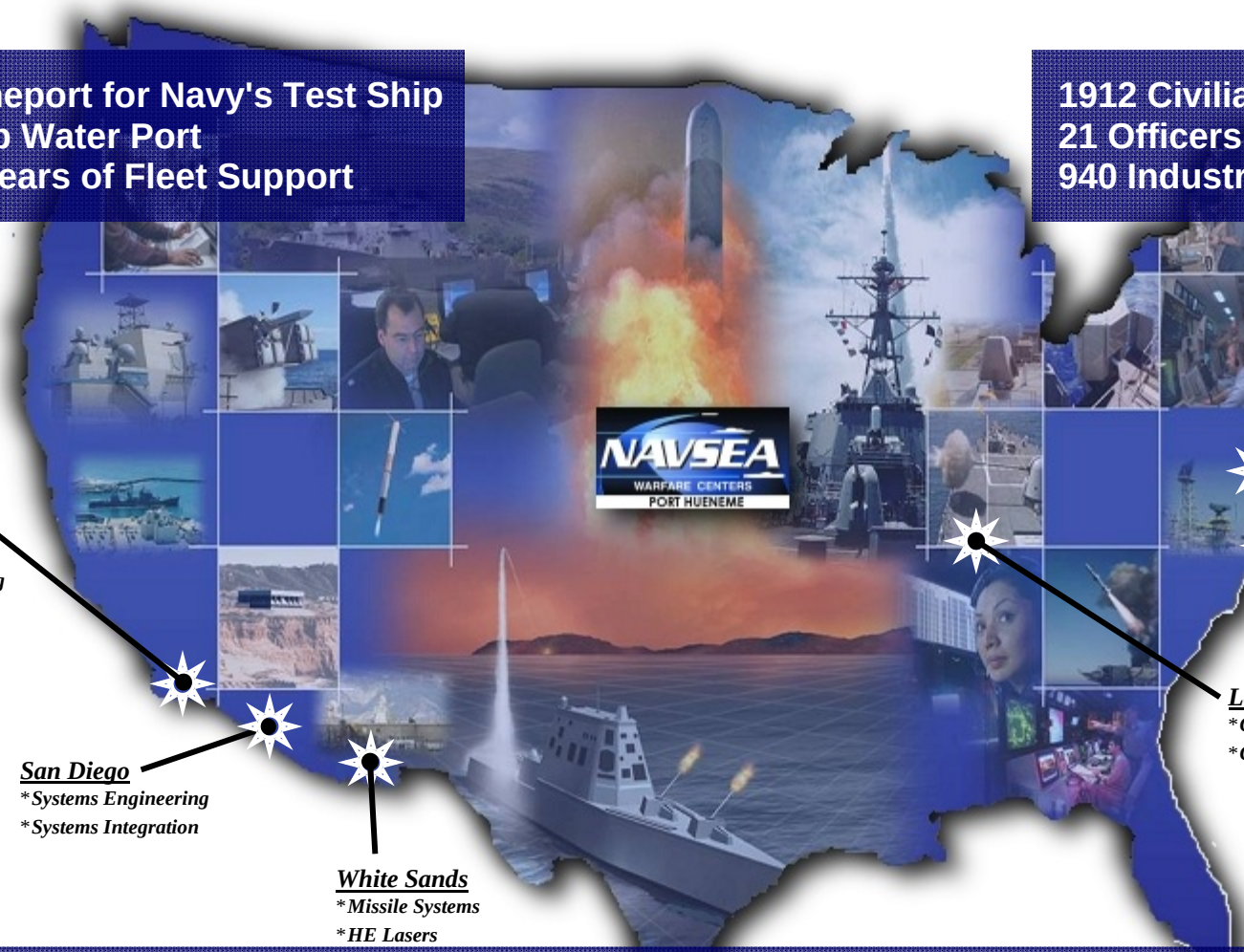


NSWC Port Hueneme Background

LAND ATTACK DEPARTMENT
NAVAL SEA SYSTEMS COMMAND PORT HUENEME

Homeport for Navy's Test Ship
Deep Water Port
44 Years of Fleet Support

1912 Civilians
21 Officers, 90 Enlisted
940 Industry Support



Port Hueneme
- **Combat, Weapon, UNREP Systems*
- **In-Service Engineering*
- **Test, Evaluation and Certification*
- **Integrated Logistics*

San Diego
- **Systems Engineering*
- **Systems Integration*

White Sands
- **Missile Systems*
- **HE Lasers*

Washington D.C.
- **Headquarters*

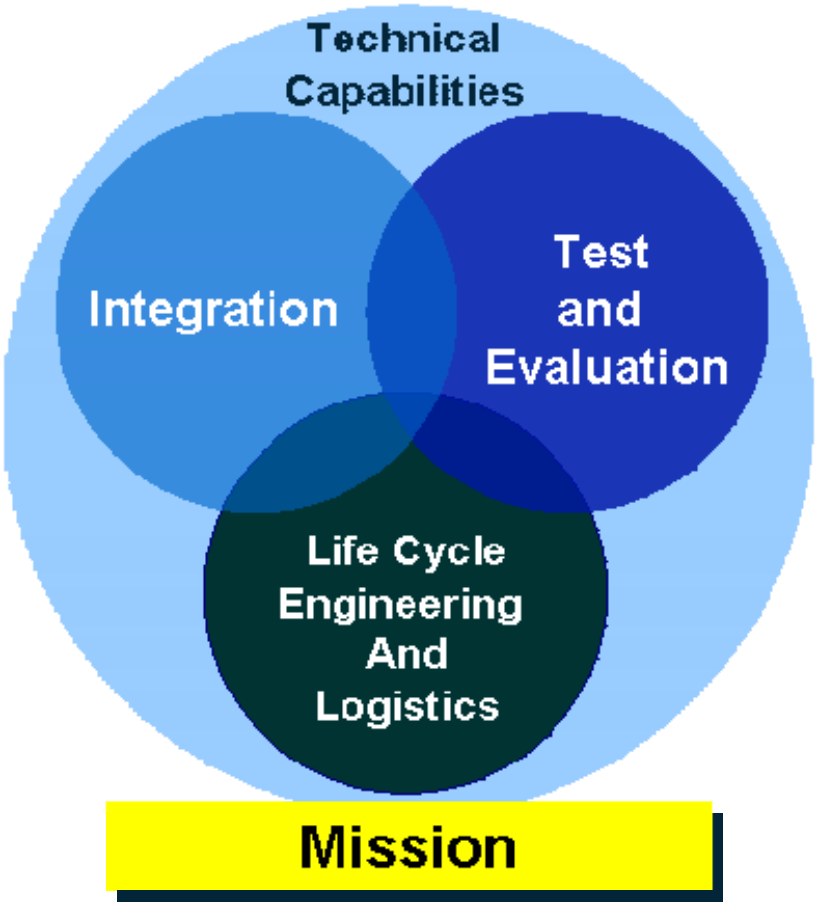
Virginia Beach
- **Radars*

Louisville
- **Guns*
- **Corrosion Control*

Mission: Integrate, Test, Evaluate and Provide Life-Cycle Engineering and Logistics for Today's and Tomorrow's Warfare Systems

NSWC Port Hueneme Background

- AEGIS Combat System
- Ballistic Missile Defense (BMD)
- Close In Weapon System
- Cooperative Engagement Capability (CEC)
- Battle Force Interoperability
- Evolved NATO Seasparrow Missile (ESSM)
- Guided Missile Launching Systems
- Gun Weapon Systems (Major/Minor Caliber)
- HARPOON Weapon System
- HE Laser
- Integrated Auto Detect & Tracking System
- MK 34 Gun Weapon System
- MK 86 Gun Fire Control System



- MK 92 Fire Control System
- NATO Seasparrow Missile System
- Rapid Anti-Ship Missile Integrated Defense System
- Rolling Airframe Missile System
- Search Radars
- Ship Self Defense System (SSDS)
- Standard Missile
- Tactical TOMAHAWK
- Target Acquisition System
- TOMAHAWK Weapon Control System (All Variants) and TOMAHAWK All Up Round
- Underway Replenishment
- Vertical Launching System

Surface Combatants | Aircraft Carriers | Amphibious | Replenishment | Strike Groups | Allied Forces

Architecture

Issue

Sustainment challenges as we move to Open Architecture

Impact

Increased "system" reliability issues

Increased maintenance complexity

Increased configuration tracking requirements

Interim Solution

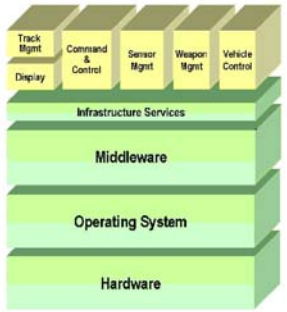
Fleet operating procedures

System level maintenance aids

SUB LRU tracking process

Long Term Solution

Design inherent capabilities to provide FD/FI
Reduce conflicts in architecture issues
Allow architecture to change as issues are found



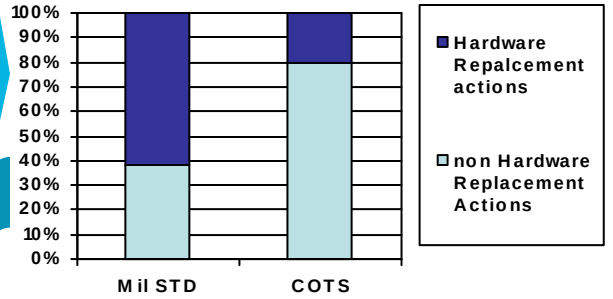
CP

MW

HW

Mil Example

COTS Example



LAN System Manual

Design Support Analysis

Issue

Current MILSTD only addresses hardware issues.

Impact

Unknown reliability issues

Inadequate maintenance aids

Inaccurate root cause identification

Interim Solution

Update and develop R&M analysis products

Conduct analysis of fleet failure

Long Term Solution

Conduct Gap analysis on current supportability guidance
Leverage from commercial efforts

*"…was upgraded to …, since then we have experienced constant **system problems** . . . experienced issues with technical documentation, parts support, equipment training, system reliability and computer program performance …."*

Data

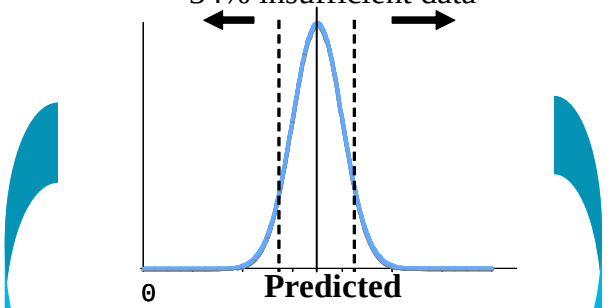
Issue

Inaccurate data obtained from manufacturer

Actual

~63% outside 1 Lambda

~34% insufficient data



3% Expected Distribution

Impact

Architecture is over and under designed

Optimal maintenance strategy may not be reflected

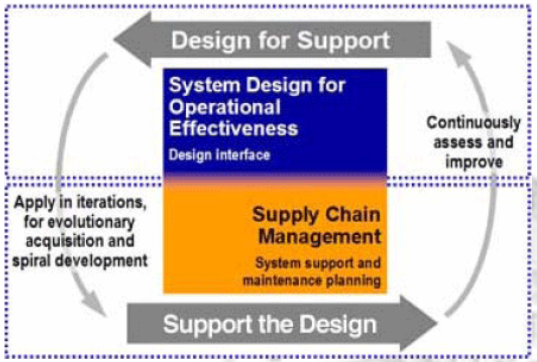
Inaccurate modeling for lifetime "buy" requirements

Interim Solution

Adjust maintenance and supply support posture on actual reliability data

Plan for reassessment of "O", "I", and "D" levels

Buy to confidence level and use fleet inventory shore assets for risk fallback



Long Term Solution

Develop weighting mechanism for adjusting predicted failure rates

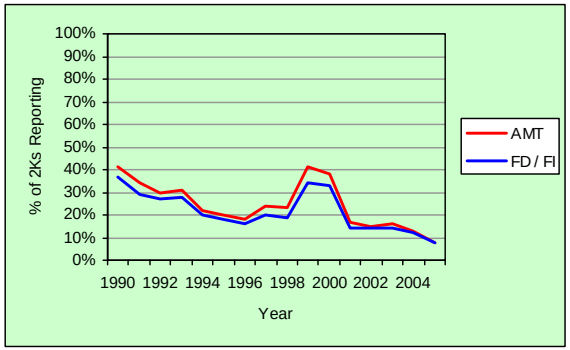
Have a iterative process for improving confidence and failure rate

Adjust acquisition or ILS milestones based on confidence of data

Feedback

Issue

RMS Data is incomplete and inaccurate for analysis beyond LRU replacement



Impact

Reliability issues are masked

Maintainability issues are not identified

System support issues are correlated to hardware, not the system

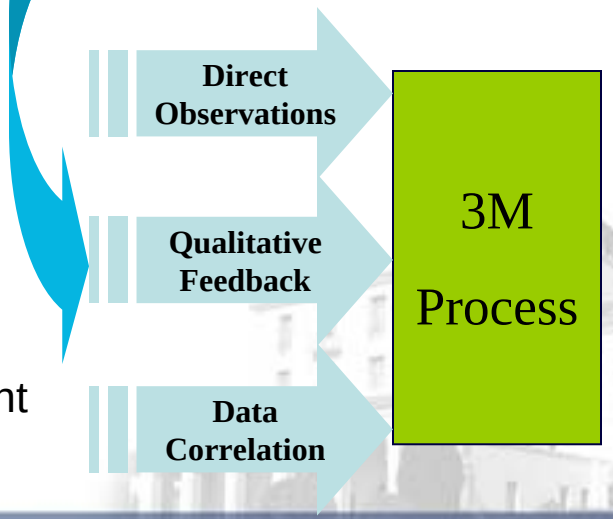
Interim Solution

Use comparative analysis

Utilize direct observations and qualitative feedback mechanisms

Modify engineering analysis process to identify correlating factors

2k – Use of optional fields is decreasing and majority ordered parts (95% in FY05)

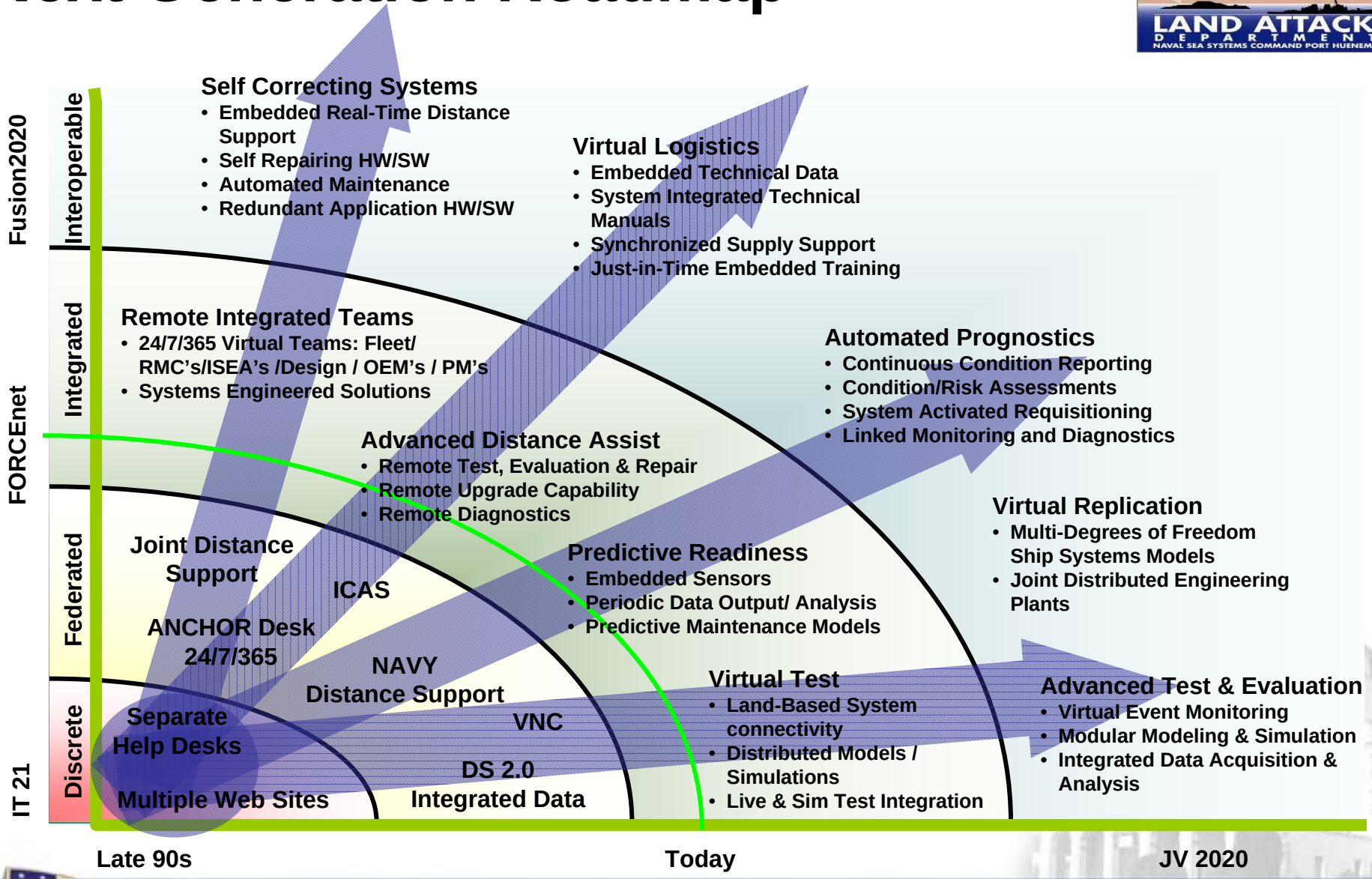


Long Term Solution

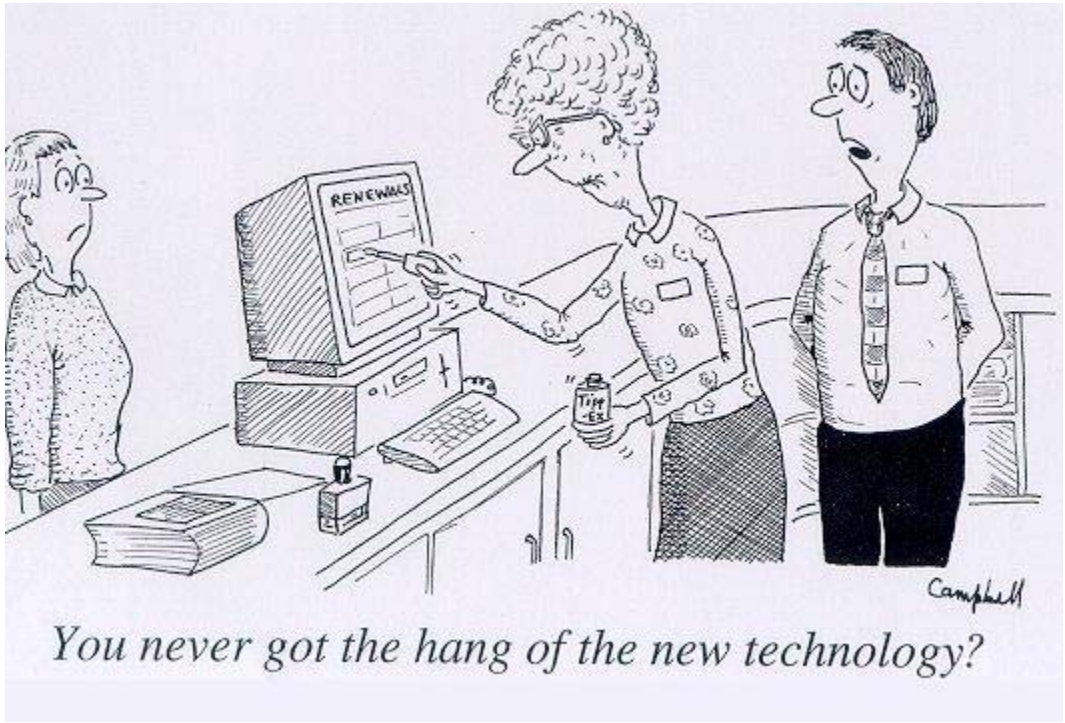
Invest in architecture to allow automated data structures for transmission of required data

Develop shorebase analysis tools as part of knowledge management

Next Generation Roadmap



Summary



ISEA recognizes the changing architecture requires changes how we provide in-service to the fleet.